OCT 26 1988

AADA 62-844

Marsam Pharmaceuticals, Inc.
Attention: Judith U. Arnoff, R.Ph.
Building 31, Olney Ave.
P.O. Box 1022
Cherry Hill, N.J. 08034

Dear Madam:

Reference is made to your abbreviated antibiotic drug application dated May 21, 1987, submitted pursuant to Section 507 of the Federal Food, Drug, and Cosmetic Act for Nafcillin Sodium for Injection, U.S.P., 500 mg, 1 g, 1.5 g, 2 g and 4 g.

We acknowledge receipt of your additional submission dated October 20, 1988.

We have completed the review of this abbreviated application and have concluded that the drug is safe and effective for use as recommended in the submitted labeling. Accordingly, the application is approved.

An expiration date of twenty-four (24) months should be used on each batch of the drug to be manufactured and packaged as described in the application.

Any significant change in the conditions outlined in this abbreviated application requires an approved supplemental application before the change may be made, except for changes made in conformance with other provisions of Section 314.70 of the New Drug Regulations.

Postmarketing reporting requirements for this abbreviated application are set forth in 21 CFR 314.80 and 314.81 of the Regulations.

This Administration should be advised of any change in the marketing status of this drug.

For Initial Campaigns: We request that you submit, in duplicate, any proposed advertising or promotional copy which you intend to use in your immediate advertising or promotional campaigns. Please submit all proposed materials in draft or mock-up form, not final print. Submit both copies together with a copy of the proposed or final printed labeling to the Division of Drug Advertising and Labeling (HFD-240). Please do not use Form FD-2253 (Transmittal of Advertisements and Promotional Labeling for Drugs for Human Use) for this initial submission.

For Subsequent Campaigns: We call your attention to Section 314.81(b)(3) of the Regulations which requires that materials for any subsequent advertising or promotional campaign, at the time of their initial use, be submitted to our Division of Drug Advertising and Labeling (HFD-240) with a completed Form FD-2253.

Sincerely yours,

10/26/88

Marvin Seife, M.D.
Director
Division of Generic Drugs
Office of Drug Standards
Center for Drug Evaluation and Research

HFD-235
HFD-235/OD
HFD-83
R/D JSinge
R/D init JHarriso
R/D init M. Seif
10-25-88 bcw 5276d

10/26/88

NDC 0003-2987-19

Equivalent to

500 mg NAFCILLIN

NAFCILLIN

Sodium for Injection USP

FOR INTRAMUSCULAR OR INTRAVENOUS USE

Caution: Federal law prohibits dispensing without prescription.

For IM use, add 1.7 mL diluent. Each mL of the resultant solution will contain nafcillin sodium, as the monohydrate, equivalent to 250 mg nafcillin, buffered with 10 mg sodium citrate. For IV use, dissolve in 15-30 mL of diluent. • See package insert. *Use solution within 3 days if stored at room temperature (25° C); within 7 days if stored under refrigeration (2°-8° C); or within 3 months if stored frozen (-20° C).* • This vial contains nafcillin sodium, as the monohydrate, buffered with 20 mg sodium citrate, equivalent to 500 mg nafcillin.

Mfd. for SQUIBB-MARSAM INC. by Marsam Pharmaceuticals Inc. Cherry Hill, NJ 08034

C2531A / R8710

SQUIBB® MARSAM®

NDC 0003-2992-20

Equivalent to 4 grams NAFCILLIN

NAFCILLIN Sodium for Injection USP

FOR INTRAVENOUS INFUSION

Caution: Federal law prohibits dispensing without prescription.

Store dry powder at room temperature 15°-30° C (59°-86° F) before constitution. *Use solution within 24 hours if stored at room temperature (25° C) or 96 hours if stored under refrigeration (2°-8° C).*

This vial contains nafcillin sodium, as the monohydrate, buffered with 160 mg sodium citrate, equivalent to 4 grams nafcillin.

Concentration: _____

Date Prepared: _____ Time: _____

Patient: _____

NAFCILLIN Sodium for Injection USP

Equivalent to 4 grams NAFCILLIN

Usual Dosage: See enclosed product literature for complete prescribing information. Add a minimum of 97 mL Sterile Water for Injection USP, Isotonic Sodium Chloride Injection USP, or other diluents listed in package insert. Shake well after adding diluent and before using. Resultant solution contains 40 mg/mL nafcillin. See package insert.

Mfd. for SQUIBB-MARSAM INC. Cherry Hill, NJ 08034 by Marsam Pharmaceuticals Inc. Cherry Hill, NJ 08034 Made in USA

C2543 / R9220

SQUIBB® MARSAM®

NDC 0003-2991-20

Equivalent to 2 grams NAFCILLIN

NAFCILLIN Sodium for Injection USP

FOR INTRAVENOUS INFUSION

Caution: Federal law prohibits dispensing without prescription.

Store dry powder at room temperature 15°-30° C (59°-86° F) before constitution. *Use solution within 24 hours if stored at room temperature (25° C) or 96 hours if stored under refrigeration (2°-8° C).*

This vial contains nafcillin sodium, as the monohydrate, buffered with 80 mg sodium citrate, equivalent to 2 grams nafcillin.

Concentration: _____

Date Prepared: _____ Time: _____

Patient: _____

NAFCILLIN Sodium for Injection USP

Equivalent to 2 grams NAFCILLIN

Usual Dosage: See enclosed product literature for complete prescribing information. Add a minimum of 48 mL Sterile Water for Injection USP, Isotonic Sodium Chloride Injection USP, or other diluents listed in package insert. Shake well after adding diluent and before using. If 48 mL is used, resultant solution contains 40 mg/mL nafcillin; if 99 mL is used, solution contains 20 mg/mL nafcillin. See package insert.

Mfd. for SQUIBB-MARSAM INC. Cherry Hill, NJ 08034 by Marsam Pharmaceuticals Inc. Cherry Hill, NJ 08034 Made in USA

C2542 / R9120

SQUIBB® MARSAM®

NDC 0003-2990-20

Equivalent to 1.5 grams NAFCILLIN

NAFCILLIN Sodium for Injection USP

FOR INTRAVENOUS INFUSION

Caution: Federal law prohibits dispensing without prescription.

Store dry powder at room temperature 15°-30° C (59°-86° F) before constitution. *Use solution within 24 hours if stored at room temperature (25° C) or within 168 hours if stored under refrigeration (2°-8° C).*

This vial contains nafcillin sodium, as the monohydrate, buffered with 60 mg sodium citrate, equivalent to 1.5 grams nafcillin.

Concentration: _____

Date Prepared _____ Time: _____

Patient _____

NAFCILLIN Sodium for Injection USP

Equivalent to 1.5 grams NAFCILLIN

Usual Dosage: See enclosed product literature for complete prescribing information.

Add a minimum of 4.8 mL Sterile Water for Injection USP or other diluents listed in package insert. Shake well after adding diluent and before using.

If 4.9 mL is used, resultant solution contains 30 mg/mL nafcillin; if 9.6 mL is used, solution contains 15 mg/mL nafcillin. See package insert.

Mfd. for SQUIBB-MARSAM INC.
Cherry Hill, NJ 08034
by Marsam Pharmaceuticals Inc.
Cherry Hill, NJ 08034
Made in USA

C2540 / R9020

SQUIBB® MARSAM®

NDC 0003-2991-10

Equivalent to

2 grams NAFCILLIN

NAFCILLIN

Sodium for Injection USP

FOR INTRAMUSCULAR OR INTRAVENOUS USE

Usual Dosage: See package insert.

Store dry powder at room temperature 15°-30° C (59°-86° F) before constitution.

Caution: Federal law prohibits dispensing without prescription.

For IM use, add 8.8 mL diluent. Each mL of the resultant solution will contain nafcillin sodium, as the monohydrate, equivalent to 250 mg nafcillin, buffered with 10 mg sodium citrate. For IV use, dissolve in 15-30 mL of diluent.

Use solution within 3 days if stored at room temperature (25° C), within 7 days if stored under refrigeration (2°-8° C), or within 3 months if stored frozen (-20° C).

This vial contains nafcillin sodium, as the monohydrate, buffered with 80 mg sodium citrate, equivalent to 2 grams nafcillin.

Mfd. for SQUIBB-MARSAM, INC.
Cherry Hill, NJ 08034
by Marsam Pharmaceuticals Inc.
Cherry Hill, NJ 08034
Made in USA

C2541/A R9110

++3000329911O1

SQUIBB® MARSAM®

NDC 0003-2989-10

Equivalent to

1 gram NAFCILLIN

NAFCILLIN

Sodium for Injection USP

FOR INTRAMUSCULAR OR INTRAVENOUS USE

Usual Dosage: See package insert.

Store dry powder at room temperature 15°-30° C (59°-86° F) before constitution.

Caution: Federal law prohibits dispensing without prescription.

For IM use, add 3.4 mL diluent. Each mL of the resultant solution will contain nafcillin sodium, as the monohydrate, equivalent to 250 mg nafcillin, buffered with 10 mg sodium citrate. For IV use, dissolve in 15-30 mL of diluent.

Use solution within 3 days if stored at room temperature (25° C), within 7 days if stored under refrigeration (2°-8° C), or within 3 months if stored frozen (-20° C).

This vial contains nafcillin sodium, as the monohydrate, buffered with 40 mg sodium citrate, equivalent to 1 gram nafcillin.

Mfd. for SQUIBB-MARSAM INC.
by Marsam Pharmaceuticals Inc.
Cherry Hill, NJ 08034
Made in USA

C2538A / R8910

++30003298910 1

SQUIBB® MARSAM®

NDC 0003-2989-20

Equivalent to 1 gram NAFCILLIN

NAFCILLIN Sodium for Injection USP

FOR INTRAVENOUS INFUSION

Caution: Federal law prohibits dispensing without prescription.

Store dry powder at room temperature 15°-30° C (59°-86° F) before constitution.
Use solution within 24 hours if stored at room temperature (25° C) or 96 hours if stored under refrigeration (2°-8° C).
This vial contains nafcillin sodium, as the monohydrate, buffered with 40 mg sodium citrate, equivalent to 1 gram nafcillin.

Concentration: _____
Date Prepared: _____ Time: _____
Patient: _____

Usual Dosage: See enclosed product literature for complete prescribing information.
Add 10 mL sterile water for injection, 0.9% sodium chloride injection USP, or other diluents listed in package insert. Shake well after adding diluent and before using.
If 40 mL is used, resultant solution contains 20 mg/mL nafcillin; if 90 mL is used, solution contains 10 mg/mL nafcillin. See package insert.

Mfd. for SQUIBB-MARSAM INC.
Cherry Hill, NJ 08034
by Marsam Pharmaceuticals Inc.
Cherry Hill, NJ 08034
Made in USA

C2539 / R8920

SQUIBB®
MARSAM®

J4-208

CAUTION: Federal law prohibits dispensing without prescription.

NAFCILLIN SODIUM FOR INJECTION USP

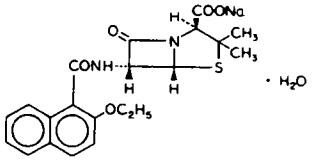
DESCRIPTION

Nafcillin sodium is a semisynthetic penicillin. Although primarily designed as an antistaphylococcal penicillin, in limited clinical trials it has been shown to be effective in the treatment of infections caused by pneumococci and Group A beta-hemolytic streptococci. Because of this wide gram-positive spectrum, this product is particularly suitable for *Initial Therapy* in severe or potentially severe infections before definitive culture results are known and in which staphylococci are suspected. This product is resistant to inactivation by staphylococcal penicillinase. Following intramuscular administration in humans, it rapidly appears in the plasma, penetrates body tissues in high concentration, and diffuses well into pleural, pericardial, and synovial fluids.

Nafcillin Sodium for Injection USP is available in vial sizes of 500 mg, 1 gram, and 2 gram nafcillin sodium as the monohydrate. When constituted as directed each vial contains, respectively, 2 mL, 4 mL, or 8 mL of solution. Each mL contains nafcillin sodium equivalent to 250 mg nafcillin buffered with 10 mg sodium citrate. In addition, Nafcillin Sodium for Injection is available in piggyback containers of 1 gram, 1.5 grams, 2 grams, and 4 grams and in a bulk pharmacy container of 10 grams of nafcillin sodium as the monohydrate. See Dosage and Administration section for constitution and concentration information.

NOTE: Nafcillin Sodium for Injection USP contains 2.9 milliequivalents of sodium per gram of nafcillin as the sodium salt.

Nafcillin sodium chemically is monosodium (2S, 5R, 6R)-6-(2-ethoxy-1-naphthamido)-3, 3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0] heptane-2-carboxylate monohydrate with the following structure:



MICROBIOLOGY

Nafcillin sodium is a bactericidal penicillin which has shown activity *in vitro* against both penicillin-G-sensitive and penicillin-G-resistant strains of *Staphylococcus aureus* as well as against pneumococcus, beta-hemolytic streptococcus, and alpha streptococcus (viridans).

In experimental mouse infections induced with pneumococci, beta-hemolytic streptococci, and both penicillin-G-susceptible and penicillin-G-resistant strains of *Staph. aureus*, nafcillin sodium was compared with methicillin and oxacillin. Regardless of the route of drug administration (intramuscular or oral), nafcillin sodium was consistently and significantly more effective than the other two penicillins.

The fate of a penicillin-G-resistant strain of *Staph. aureus* was determined in the kidneys of mice treated with penicillin G, methicillin, and nafcillin sodium. Animals injected with the nafcillin sodium showed negative cultures after the fourteenth day, whereas positive kidney cultures were obtained during the entire 28-day period from mice treated with penicillin G and methicillin.

CLINICAL PHARMACOLOGY

Nafcillin sodium is relatively nontoxic for animals. The acute LD_{50} of this product by oral administration in rats and mice was greater than 5 g/kg; by intramuscular administration in rats, 2800 mg/kg; by intraperitoneal administration in rats, 1240 mg/kg; and by intravenous administration in mice, 1140 mg/kg. The intraperitoneal LD_{50} in dogs is 600 mg/kg. Animal studies indicated that local tissue responses following intramuscular administration of 25% solutions were minimal and resembled those of penicillin G rather than methicillin.

Animal studies indicate that antibacterial amounts are concentrated in the bile, kidney, lung, heart, spleen, and liver. Eighty-four percent of an intravenously administered dose can be recovered by biliary cannulation and 13 percent by renal excretion in 24 hours. High and prolonged tissue levels can be demonstrated by both biological activity assays and C^{14} distribution patterns.

At comparable dosage, intramuscular absorption of this product is nearly equivalent to that of intramuscular methicillin. Blood concentrations may be tripled by the concurrent use of probenecid. Clinical studies with nafcillin sodium monohydrate in infants under three days of age and premature have revealed higher blood levels and slower rates of urinary excretion than in older children and adults.

Studies of the effect of this product on reproduction in rats and rabbits have been completed and reveal no fetal or maternal abnormalities. These studies include the observation of the effects of administration of the drug before conception and continuously through weaning (one generation).

Disc Susceptibility Tests

Quantitative methods that require measurement of zone diameters give the most precise estimates of antibiotic susceptibility. One such procedure* has been recommended for use with discs for testing susceptibility to penicillinase-resistant penicillin-class antibiotics. Interpretations correlate diameters on the disc test with MIC values for penicillinase-resistant penicillins. With this procedure, a report from the laboratory of "susceptible" indicates that the infecting organism is likely to respond to therapy. A report of "resistant" indicates that the infecting organism is not likely to respond to therapy. A report of "intermediate susceptibility" suggests that the organism would be susceptible if high dosage is used, or if the infection is confined to tissues and fluids (e.g., urine) in which high antibiotic levels are attained.

*Bauer, A.W., Kirby, W.M.M., Sherris, J. C., and Turck, M.: Antibiotic Testing by a Standardized Single-Discs Method, Am. J. Clin. Pathol., 45:493, 1966; Standardized Disc Susceptibility Test, FEDERAL REGISTER 37:20527-29, 1972.

INDICATIONS AND USAGE

Although the principal indication for nafcillin sodium is in the treatment of infections due to penicillinase-producing staphylococci, it may be used to initiate therapy in such patients in whom a staphylococcal infection is suspected. (See Important Note below.)

Bacteriologic studies to determine the causative organisms and their sensitivity to nafcillin sodium should be performed.

In serious, life-threatening infections, oral preparations of the penicillinase-resistant penicillins should not be relied on for initial therapy.

IMPORTANT NOTE

When it is judged necessary that treatment be initiated before definitive culture and sensitivity results are known, the choice of nafcillin sodium should take into consideration the fact that it has been shown to be effective only in the treatment of infections caused by pneumococci, Group A beta-hemolytic streptococci, and penicillin-G-resistant and penicillin-G-sensitive staphylococci. If the bacteriology report later indicates the infection is due to an organism other than a penicillin-G-resistant staphylococcus sensitive to nafcillin sodium, the physician is advised to continue therapy with a drug other than nafcillin sodium or any other penicillinase-resistant, semisynthetic penicillin.

Recent studies have reported that the percentage of staphylococcal isolates resistant to penicillin G outside the hospital is increasing, approximating the high percentage of resistant staphylococcal isolates found in the hospital. For this reason, it is recommended that a penicillinase-resistant penicillin be used as initial therapy for any suspected staphylococcal infection until culture and sensitivity results are known.

Methicillin is a compound that acts through a mechanism similar to that of nafcillin sodium against penicillin-G-resistant staphylococci. Strains of staphylococci resistant to methicillin have existed in nature, and it is known that the number of these strains reported has been increasing. Such strains of staphylococci have been capable of producing serious disease, in some instances resulting in fatality. Because of this there is concern that widespread use of the penicillinase-resistant penicillins may result in the appearance

of an increasing number of staphylococcal strains which are resistant to these penicillins.

Methicillin-resistant strains are almost always resistant to all other penicillinase-resistant penicillins (cross-resistance with cephalosporin derivatives also occurs frequently). Resistance to any penicillinase-resistant penicillin should be interpreted as evidence of clinical resistance to all, in spite of the fact that minor variations in *in vitro* sensitivity may be encountered when more than one penicillinase-resistant penicillin is tested against the same strain of staphylococcus.

CONTRAINDICATIONS

A history of allergic reaction to any of the penicillins is a contraindication.

WARNINGS

Serious and occasionally fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin therapy. Although anaphylaxis is more frequent following parenteral therapy, it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with a history of sensitivity to multiple allergens.

There have been reports of individuals with a history of penicillin hypersensitivity reactions who have experienced severe hypersensitivity reactions when treated with a cephalosporin. Before therapy with a penicillin, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins, and other allergens. If an allergic reaction occurs, appropriate therapy should be instituted, and discontinuation of nafcillin therapy considered. The usual agents (antihistamines, pressor amines, corticosteroids) should be readily available.

PRECAUTIONS

As with any potent drug, periodic assessment of organ-system function, including renal, hepatic and hematopoietic, should be made during prolonged therapy.

The possibility of bacterial and fungal overgrowth should be kept in mind during long-term therapy. If overgrowth of resistant organisms occurs, appropriate measures should be taken.

The oral route of administration should not be relied upon in patients with severe illness, or with nausea, vomiting, gastric dilatation, cardiospasm, or intestinal hypermotility. Safety for use in pregnancy has not been established. Particular care should be taken with intravenous administration because of the possibility of thrombophlebitis.

ADVERSE REACTIONS

Reactions to nafcillin sodium have been infrequent and mild in nature. As with other penicillins, the possibility of an anaphylactic reaction or serum-sickness-like reactions should be considered. A careful history should be taken. Patients with histories of hay fever, asthma, urticaria, or previous sensitivity to penicillin are more likely to react adversely.

Transient leukopenia, neutropenia with evidence of granulocytopenia or thrombocytopenia are infrequent and usually associated with prolonged therapy with high doses of penicillin. These alterations have been noted to return to normal after cessation of therapy.

The few reactions associated with the intramuscular use of nafcillin sodium have been skin rash, pruritus, and possible drug fever.

DOSAGE AND ADMINISTRATION

It is recommended that parenteral therapy be used initially in severe infections. The patient should be placed on oral therapy with this product as soon as the clinical condition warrants. Very severe infections may require very high doses.

Intravenous Route: 500 mg every 4 hours in adults; double the dose if necessary in very severe infections.

The required amount of drug should be diluted in 15 to 30 mL of Sterile Water for Injection USP, or Sodium Chloride Injection USP, and injected over a 5-to 10 minute period. This may be accomplished through the tubing of an intravenous infusion if desirable.

To add nafcillin sodium to an intravenous solution, constitute the vials as directed under "How Supplied"—"For Parenteral Administration." Add the constituted vial contents immediately to the intravenous solution or within 8 hours following constitution if the vials are kept at room temperature (25° C) or within 48 hours following constitution if the vials are kept at refrigeration (2°-8° C).

Stability studies on nafcillin sodium at concentrations of 2 mg/mL to 40 mg/mL in the following intravenous solutions indicate the drug will lose less than 10% activity at room temperature (70° F) or, if kept under refrigeration, during the time period stipulated:

STABILITY OF	ROOM TEMPERATURE	REFRIGERATION
Sterile Water for Injection	24 hours	96 hours
Isotonic sodium chloride	24 hours	96 hours
5% dextrose in water	24 hours	96 hours
5% dextrose in 0.4% sodium chloride solution	24 hours	96 hours
Ringer's solution	4 hours	96 hours
M/6 sodium lactate solution	24 hours	96 hours

Discard any unused portions of intravenous solutions after 24 hours if kept at room temperature or after 96 hours if kept under refrigeration.

Only those solutions listed above should be used for the intravenous infusion of Nafcillin Sodium. The concentration of the antibiotic should fall within the range of 2 to 40 mg/mL. The drug concentrate and the rate and volume of the infusion should be adjusted so that the total dose of nafcillin is administered before the drug loses its stability in the solution in use.

There is no clinical experience available on the use of this agent in neonates or infants for this route of administration. This route of administration should be used for relatively short-term therapy (24-48 hours) because of the occasional occurrence of thrombophlebitis, particularly in elderly patients.

PIGGYBACK UNITS (for Intravenous Drip Use)—As diluents, use the following solutions: Sterile Water for Injection, Isotonic Sodium Chloride, 5% dextrose in water, 5% dextrose in

0.4% sodium chloride solution, Ringer's solution, or M/6 sodium lactate solution.

1-GRAM BOTTLE
Add a minimum of 49 mL diluent and shake well. If lower concentrations are desired, the solution could be further diluted with up to a total of 99 mL of diluent.

Amount of Diluent	Concentration of Solution
49 mL	20 mg/mL
99 mL	10 mg/mL

1.5-GRAM BOTTLE
Add a minimum of 49 mL diluent and shake well. If lower concentrations are desired, the solution could be further diluted with up to a total of 99 mL of diluent.

Amount of Diluent	Concentration of Solution
49 mL	30 mg/mL
99 mL	15 mg/mL

2-GRAM BOTTLE
Add a minimum of 49 mL diluent and shake well. If lower concentrations are desired, the solution could be further diluted with up to a total of 99 mL of diluent.

Amount of Diluent	Concentration of Solution
49 mL	40 mg/mL
99 mL	20 mg/mL

4-GRAM BOTTLE
Add 97 mL diluent and shake well. The resulting solution will contain 40 mg/mL.

The resulting solutions may then be administered alone or with the intravenous solutions listed above. Discard unused solution after 24 hours at room temperature (70° F) or 96 hours if kept under refrigeration. Administer piggyback through an IV tubing very slowly (at least 30-60 minutes) to avoid vein irritation.

At times it may be desired to use the contents of the piggyback bottles for addition to large-volume IV fluids. In this case the entire vial contents should be dissolved in not less than 25 mL of Sterile Water for Injection. Use the resulting concentration within 24 hours when kept at room temperature or within 96 hours when kept under refrigeration.

10-GRAM BOTTLE
This package is designed for use in the pharmacy for preparing IV additives. Add 93 mL Sterile Water for Injection USP or isotonic Sodium Chloride Injection USP. Shake vial after adding diluent and before using. The resulting solution will contain 100 mg nafcillin activity and 4 mg sodium citrate, as a buffer, per mL. Use solution within 8 hours if stored at room temperature (25° C) or 48 hours if stored under refrigeration (2°-8° C).

THIS PACKAGE IS NOT TO BE DISPENSED AS A UNIT.

INTRAMUSCULAR ROUTE
500 mg every 6 hours in adults; decrease the interval to 4 hours if necessary in severe infections. In infants and children, a dose of 25 mg/kg (about 12 mg per pound) twice daily is usually adequate. For neonates 10 mg/kg is recommended twice daily.

To constitute see directions and table below.

The clear solution should be administered by deep intragluteal injection immediately after constitution. After constitution, keep refrigerated (2°-8° C) and use within 7 days, keep at room temperature (25° C) and use within 3 days or keep frozen (-20° C) for up to 3 months.

When constituted as recommended (see table below) with Sterile Water for Injection USP, Sodium Chloride Injection USP, or Bacteriostatic Water for Injection USP, with parabens or with benzyl alcohol, each vial contains, respectively, 2 mL, 4 mL, or 8 mL of solution. Each mL contains nafcillin sodium equivalent to 250 mg nafcillin buffered with 10 mg sodium citrate.

Vial Size	Amount of Diluent	Nafcillin Sodium Solution
500 mg	1.7 mL	2 mL
1 gram	3.4 mL	4 mL
2 gram	6.8 mL	8 mL

Parenteral products should be inspected visually for particulate matter and discoloration whenever solution and container permit.

HOW SUPPLIED
Nafcillin Sodium for Injection USP, as the monohydrate, buffered with sodium citrate, equivalent to 500 mg, 1, 1.5, 2, 4, or 10 grams nafcillin per vial is available as follows:

NDC 0003-2987-10 - 500 mg vial packaged in 10s
NDC 0003-2989-10 - 1 gram vial packaged in 10s
NDC 0003-2989-20 - 1 gram piggyback packaged in 10s
NDC 0003-2990-20 - 1.5 gram piggyback packaged in 10s
NDC 0003-2991-10 - 2 gram vial packaged in 10s
NDC 0003-2991-20 - 2 gram piggyback packaged in 10s
NDC 0003-2992-20 - 4 gram piggyback packaged in 10s
NDC 0003-2993-25 - 10 gram pharmacy bulk package packaged in 10s

STORAGE
Store sterile powder at controlled room temperature 15°-30° C (59°-86° F).

Manufactured for
SQUIBB-MARSAM, INC.
Cherry Hill, NJ 08034
by Marsam Pharmaceuticals Inc.
Cherry Hill, NJ 08034

J4-208 Printed in USA Issued August 1988

Manufacturing and Controls Review
#62-844

Nafcillin Sodium for Injection, U.S.P.

Marsam Pharmaceuticals, Inc.

Material reviewed: A-008 dated October 20, 1988

Applicant's submission contains final printed labeling

1. Package insert - satisfactory.

2. Container label

500 mg vial -satisfactory.
1 g vial - satisfactory.
2 g vial - satisfactory.
1 g piggyback vial - satisfactory.
1.5 g piggyback vial satisfactory.
2 g piggyback vial - satisfactory.
4 g piggyback vial - satisfactory.

3. Exhibit Sample testing results - satisfactory. See memo from HFD-473 dated August 8, 1988

4. Establishment Evaluation Request - satisfactory.

Recommendation - the application can be approved.

John M. Singer

NOTICE OF APPROVAL
NEW DRUG APPLICATION OR SUPPLEMENT

NDA NUMBER: 62-544

DATE APPROVAL LETTER ISSUED:

TO: Press Relations Staff (HFI-40)

FROM: ☑ Bureau of Drugs ☐ Bureau of Veterinary Medicine

ATTENTION

Forward original of this form for publication only after approval letter has been issued and the date of approval has been entered above.

TYPE OF APPLICATION: ☑ ORIGINAL NDA ☐ SUPPLEMENT TO NDA ☐ ABBREVIATED ORIGINAL NDA ☐ SUPPLEMENT TO ANDA

CATEGORY: ☑ HUMAN ☐ VETERINARY

TRADE NAME *(or other designated name)* AND ESTABLISHED OR NONPROPRIETARY NAME *(if any)* OF DRUG:

Nafcillin Sodium

DOSAGE FORM: for Injection

HOW DISPENSED: ☑ RX ☐ OTC

ACTIVE INGREDIENT(S) *(as declared on label. List by established or nonproprietary name(s) and include amount(s), if amount is declared on label.)*

nafcillin sodium equivalent to nafcillin 500mg. per vial 1g. 1.5g. 2g. 4g.

NAME OF APPLICANT *(Include City and State)*

Marsam Pharmaceuticals, Inc.
Building 31, Olney Ave.
P.O. Box 1022
Cherry Hill, N.J. 08034

PRINCIPAL INDICATION OR PHARMACOLOGICAL CATEGORY

Antibiotic

COMPLETE FOR VETERINARY ONLY

ANIMAL SPECIES FOR WHICH APPROVED

COMPLETE FOR SUPPLEMENT ONLY

CHANGE APPROVED TO PROVIDE FOR

FORM PREPARED BY

DATE: 10/24/88

FORM APPROVED BY

NAME: Edwin Deise, M.D.

DATE: 10/26/88

FORM FD 1642 (2/75) PREVIOUS EDITION MAY BE USED UNTIL SUPPLY IS EXHAUSTED.

MARSAM
PHARMACEUTICALS INC.

Food and Drug
Approved 10/26/88
For the Commissioner of Food & Drugs
FOOD AND DRUG ADMINISTRATION
DEPARTMENT OF HEALTH AND HUMAN SERVICES

A008

October 20, 1988

Mr. John M. Singer
Division of Generic Drugs
Antibiotics Review Branch
Attention: Document Control Room
HFN-235, Room 17-48
Food and Drug Administration
Center for Drugs and Biologics
5600 Fishers Lane
Rockville, MD 20857

Re: ANDA# 62-844 Nafcillin Sodium for Injection USP

Dear Mr. Singer:

The purpose of this letter is to amend the referenced application. We are submitting Final Printed Labeling which you requested when I discussed this application with you on August 30, 1988.

We are enclosing 12 copies (9 mounted and 3 enveloped) of container and package insert labeling for the referenced drug product. Carton labeling will be done in-line via ink jet as we discussed on June 29, 1988.

I hope this material which is submitted adequately responds to your requests and that we may receive a prompt approval of this application.

Sincerely,

Judith U. Arnoff, RPh
Vice President

JUA/rf
Enclosures
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OCT 21 1988

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